

Hepaticae Africanæ novae  
in insulis Bourbon, Maurice et Madagascar lectae.

F. STEPHANI.

(WITH PLATES XVII-XIX.)

1. *Aneura comosa* ST. n. sp.

Dioica, pallide-flavicans, super muscos in plagas latas expansa; *frons* usque ad 7 cm. longa, 2 mm. lata, parum breviterque radicans; laciniae primariae furcatae, furcis irregulariter, superne dense pinnatis raro bipinnatis, pinnulae ultimae trunco triplo angustiores brevissimae; perfecte plana, ubique fere 6 cell., margine autem 3 cell. alta. *Cellulae* corticales 0.1 mm. longae, in sectione transversali 0.035 mm. latae, 0.017 mm. altae; cellulae internae frondis multo majores, in sectione 0.050: 0.070 mm. pellucidae fere vacuae, parietibus haud incrassatis.

*Flores feminei* numerosi, in pinnulis parvis primariis singuli vel—hac pinnula furcata, geminati; ramulus femineus brevis, naviculiformis i. e. superficie oblonga plana apice rotundata subtus valde incrassatus, marginibus parum elevatis; squama dorsalis fere nulla, ut margo ramuli ciliis longis comatis fimbriata; pistilla itaque omnino occulta et ramuli aequae obvelata.

Ciliae ceterum unicellulares et haud radicales; facies postica ramuli tamen radicellis veris villosa et muscis arcte affixa.

*Bourbon.* leg. Rodriguez.

2. *Aneura longispica* ST. n. sp.

Dioica, dense depresso-caespitosa, mediocris, triste viridis. *Frons* procumbens, convexo-plana, hic illic radicans, ramis primariis angustis 0.37 mm. latis 2–3 cm. longis, irregulariter pinnatis, pinnulis latioribus (0.85 mm.) inaequilongis simplicibus vel furcatis, raro pinnulatis. *Cellulae* corticales internis aequimagnae. *Flores femineos* haud vidi; *calyptra* 0.57 mm. lata, 1.7 mm. longa, ad basin pinnularum majorum, e basi angusta quasi stipitata ovata, superne tuberculosa, mamilla apicali majuscula.

*Androecia* in pinnulis numerosa saepe regulariter pinnatim



disposita, longissima 1.5–2 mm. longa, margine erecto crenulata, antheris biseriatis 14–20 jugis.

*Bourbon.* leg. Rodriguez. Boivin.

3. ***Aneura nudiflora*** St. n. sp.

Dioica, flavo-virens, humilis, subcaespitosa, minor. *Frons* e caudice repente procumbens, ramis primariis brevibus subdigitatim partitis, longioribus regulariter pinnatis, pinnulis approximatis subaequalibus linearibus, apice *cuspidatis*; basis pinnularum in diametro 16 cell. lata, quarum tres marginales in utroque latere, in medio 4 cell. margine 1 cell. crassa. Cellulae corticales medianae valde elongatae (0.1 : 0.035 mm.). *Ramulus femineus* ad basin ramorum brevissimus, supra subplanus, subtus parum convexus, marginibus pellucidis tenuibus, pulchre laxèque reticulatis, irregulariter profundeque inciso-laciniatis, adscendentibus vel parum incurvis, pistilla itaque perfecte nuda.

*Bourbon.* leg. Rodriguez.

Facile distinguenda configuratione ramuli ♀ pinnulisque attenuatis!

4. ***Aneura saccatiflora*** St. n. sp.

Monoica, pallide-flavicans, dense depresso-caespitosa; *frons* procumbens, stolonifera, uno latere pinnulis brevibus, altero ramulis majoribus adscendentibus obsita, in sectione plus duplo latior quam alta, biconvexa; ramuli ad basin angusti superne multo latiores, dense pinnati, plani, marginibus decurvis, tenues i. e. in sectione 4 cellulas solum crassi, quarum 2 interiores multo majores. Pinnulae dense et apice ramorum fasciculatim dispositae, valde concavae apicibus incurvis, triplo angustiores quam ramuli, inaequilongae, lineares, distinctius costatae, costa dimidium pinnulae latitudinis occupans, marginibus 3 cell. latis, 1 cell. crassis.

*Flores feminei* in trunci pinnulis brevibus valde numerosi, saepe utroque latere regulariter seriatim, ramulus ♀ brevis, postice tumidissimus fere saccatiformis, superficie descendente (fere verticali in planta horizontali) margine irregulariter inciso filisque laxè cellulosi dense fimbriato; squama dorsalis brevis, paucidentata.

*Calyptra* e basi angustiore obovata, dimidio supero cellulis squamisque laxè cellulosi hirta, vertice fasciculo cellularum similium coronato; basi 5 cell. superne 3 cell. crassa.

*Androecia* ramulis femineis approximata, primo breves curvata et sub fronde occulta, dein elongata porrecta, antheridiis 6–8 jugis, marginibus papulosis.

*Bourbon.* leg. Rodriguez.



5. *Chilosecyphus grandistipus* ST. n. sp.

Dioica, pallide-virens, major, muscis irrepens. *Caulis* 4-5 cm. longus vage pauciramosus arcte repens. *Folia* dense imbricata, opposita fere recte patentia, ovata, apice truncata, tri-quadri-spinosa, in medio marginis ventralis spina quarta solitari munita, dorso breviter decurrentia coalita. Cell. 0.035 mm. basi 0.035 : 0.050 mm., trigonis subnullis.

*Amphigastria* magna, caule fere quintuplo latiora, foliis utroque latere distincte coadunata, circumscriptione reniformia, profunde sinuatim inserta, apice lunatim excisa longeque bispinosa, lateribus varie dentatis spinosisque.

Singulum ramulum ♀ junius in axilla amphig. inveni.

*Bourbon*. leg. Rodriguez.

6. *Taxi-Lejeunea conformis* N. & M.

Monoica, pallide-virens, flaccida, minor; *caulis* 3-4 cm. longus, vage multiramosus. *Folia* parum imbricata ovata breviter acuminata, acuta rare apiculata, fere recte patentia, plana, *lobulo* vel nullo vel caule duplo latiore, leniter inflato, carina arcuata sinuatim in folii marginem excurrentes, oblique truncatus, angulo acuto. Cell. apice 0.017 mm. medio 0.017 : 0.035 mm., basi 0.025 : 0.035 mm. incrassatio angulosa nulla. *Amphig.* caule quadruplo latiora reniformi-rotunda, basi breviter decurrentia ad  $\frac{1}{3}$  incisa, rima angusta, laciniis acutis. *Perianthia* pseudolateralia i. e. uno latere innovata, clavata superne 5 plicata plicis humilibus inermibus, rostro brevissimo; *folia floralia* caulinis parum angustiora hic illic dente obtuso munita, lobulo minimo plicaeformi (semper?). *Amph. involucre* foliis suis brevius, ovatum ad  $\frac{1}{3}$  trifidum, rima angusta, laciniis acuminatis acutis. *Androecia* parva in trunco primario lateralibus, bracteis 3 jugis.

*Bourbon, Maurice et Madagascar*, communis, semper inter muscos adscendens.

Species bene distincta, in pag. 355 Synops. Hepat. descripta (sine perianthio).

7. *Eu-Lejeunea ecarinata* ST. n. sp.

Monoica, pallide-flavescent, in cortice dense stratificata. *Caulis* vage multiramosus, ramis simplicibus superne dense breviterque pinnatis. *Folia* dense imbricata, ovata oblique patentia concaviuscula, *lobulo* majusculo caule fere duplo latiore, ovato inflato apice oblique truncato, carina valde arcuata recto angulo in folii marginem transeunte. Cell. apice 0.012 mm., medio 0.017 mm., basi 0.025 mm., trigonis majusculis acutis. *Amphig.* magna, caule triplo latiora, transverse



inserta fere circularia, ad medium bifida rima angusta obtusa laciniis acutis.

*Perianthia* pseudolateralia longe exserta pyriformia inflato-ecarinata, longerostrata. *Folia floralia* caulinis multo minora, erecta oblonga, acuta, perianthio accumbentia profunde complicato-biloba, lobo duplo brevior oblongo-triangulari acuto; *amph. involucre* anguste-oblongum, ad  $\frac{1}{3}$  acute incisum, lobis lanceolatis acutis, foliis suis alte connatum.

*Androecia* parva cauligena, globosa, bracteis bijugis.

Madagascar. leg. Camboué.

Perianthio ecarinato facile distinguenda, proxima *Lej. cyathophorae* Spruce.

#### 8. *Cheilo-Lejeunea Kurzii* ST. n. sp.

Monoica, minor, fusco-olivacea, dense depresso-caespitosa. *Caulis* 2 cm. longus, multiramosus, ramulis dense pinatis. *Folia* parum imbricata fere recte patentia, late semicordata rotundata, concaviuscula, lobulo triplo brevior, parum inflato, fere rectangulari, carina leniter arcuata, sinuatim in folii marginem excurrent. *Cell.* apice 0.008 mm., reliquae 0.017 mm. regulariter hexagonae, parietibus aequaliter incrassatis, valde chlorophylliferae.

*Amph.* caule plus duplo latiora, basi cuneata, transverse inserta, ovata, ad medium bifida, rima angusta, laciniis obtusis, margine laterali angulatis.

*Perianthia* pro planta magna, pseudolateralia, compresso-pyriformia, 5 carinata carinis posticis humilibus usque ad basin fere decurrentibus, rostro parvo; *folia floralia* caulinis aequimagna, falcatis patula, lobulo brevior angusto; *amph. involucre* ovatum, ad medium bifidum, rima angusta, lobis obtusis.

*Androecia* cauligena, oligophylla.

Bourbon. leg. Rodriguez; planta originalis a celeb. Kurz in insulis Nicobaribus anno 1875 lecta et in museo Vindobonensi asservata est.

#### 9. *Cerato-Lejeunea mascarena* ST. n. sp.

Monoica, fusco-brunnea, laxe caespitans. *Caulis* 3-4 cm. longus, vage ramosus. *Folia* imbricata, falcato-ovata, acuta vel apiculata, rarissime obtusa vel bidentula, adultiora concava, juniora valde decurva vel revoluta, in statu explanato recte patentia. *Cellulae* regulariter hexagonae pellucidae, apice 0.012 mm., medio 0.017 mm., basi 0.035 mm., angulis medioque parum incrassatae. *Lobulus* parvus, caule vix aequilatus, e basi ovata inflata apicem versus duplo angustior, oblique truncatus angulo acuto. *Amphig.* contigua.



maxima, caule 7-plo latiora, cordiformia vel (adulta) reniformi-rotunda, cauli appressa alis decurvulis, ad  $\frac{1}{3}$  incisa, rima angusta laciniis acutis.

*Perianthia* parva, in ramulis pseudolateralibus, e basi angusta obovata quadricornuta, cornubus perianthio duplo brevioribus angustis, ventralibus strictis dorsalibus deorsum curvatis, rostro longiusculo. *Folia invol.* caulinis minora, e basi angusta obovata superne irregulariter grosse dentata, lobulo magno lanceolato acuminato apice acuto vel bifido. *Amph. involucre* foliis suis aequimagnum spathulatum, ad  $\frac{1}{3}$  anguste incisum, laciniis conniventibus parce dentatis.

*Androecia* parva, cauligena, bracteis bi-tri-jugis.

*Bourbon, Maurice.* leg. Rodriguez.

Proxima *Lej. Belangerianae*, quae differt *amph.* multo minoribus subtransverse insertis perianthiis majoribus cornubus longis divaricatis, etc.

10. ***Cerato-Lejeunea mauritiana* ST. n. sp.**

Monoica, fusco-badia. *Caulis* 3-4 cm. longus pauciramosus, pinnulis microphyllis. *Folia* imbricata, recte patentia, late semicordata subplana, apice rotundata, lobulo inflato ovato apicem versus angustato oblique truncato, carina arcuata plus minus profunde sinuatim excurrente. *Cell.* apice 0.012 mm., reliquae 0.025 mm., basi ocellum singulum 0.025 : 0.050 mm. *Amph.* foliis duplo minora caule 6-plo latiora, cordiformia, sinuatim inserta ad  $\frac{1}{2}$  bifida, rima angusta laciniis obtusis.

*Perianthia* pseudolateralibus longe exserta, pyriformia 4 carinata, carinis inflatis; cornua erecta angusta, parum divergentia, perianthio triplo breviora; *folia floralia* caulinis multo minora ovata vel oblonga, apiculata vel acuminata subdenticulata, profunde complicato-biloba, lobulo magno, duplo brevior triangulari; *amph. involucre* foliis suis duplo minus, oblongum subdenticulatum ad  $\frac{1}{3}$  bifidum sinu angusto laciniis obtusis. *Androecia* cauligena, bracteis 2-3 jugis.

*Maurice.* leg. Rodriguez.

11. ***Lopho-Lejeunea multilacera* ST. n. sp.**

Monoica, rufescens, mediocris, muscis irrepens. *Caulis* multipartitus, ramis pinnatis, pinnulis inaequilongis recte patentibus. *Folia* imbricata, ovata, recte patentia, acuminata, integerrima vel apice paucidenticulata, acuta, valde recurva, lobulus caule duplo latior, basi maxime inflatus, carina itaque valde arcuata abrupte in folii marginem excurrente, oblique truncatus, angulo acuto. *Cell.* apice 0.008 mm., margine 0.017 mm., reliquae 0.025 mm., trigonis majusculis acutis.



Amph. foliis aequimagna, reniformia, profunde sinuatim inserta, concava, apice recurvo.

*Perianthia* compresso-turbinata, 4 carinata, carinis alte cristatis, cristis grosse lobatis dentatisque; *folia floralia* intima caulinis similia duplo majora, lobulo magno duplo brevior, anguste rectangulari angulo obtuso. *Amph. perich.* e basi cuneata fere orbiculatum, integerrimum, convexum apice tamen recurvatum. *Androecia* in medio ramo, bractee 7-8 jugae, laxae dispositae, foliis caulinis similes, lobulo magno duplo minore parum inflato recte truncato obtuso.

*Bourbon.* leg. Rodriguez.

Proxima *Lej. adplanatae*, quae differt foliis apiculatis, foliorum cellulis multo majoribus amphigastrio involucrali grosse dentato et perianthii carinis multo minus laceratis.

12. **Acro-Lejeunea parviloba** St. n. sp.

Dioica, robusta, fusco-olivacea, dense depresso-caespitosa. *Caulis* 5-6 cm. longus, multiramosus, ramis remote pinnatis, pinnulis brevibus. *Folia* dense imbricata, semicordato-ovata, apice rotundata, fere recte patentia leniter falcata, lobulo triplo brevior, basi inflato, apicem versus angustato oblique truncato (angulo acuto), longe in folii marginem recurvum excurrente, carina leniter arcuata. *Cell. marg.* 0.008, reliquae 0.012: 0.025 mm., trigonis majusculis acutis. *Amph.* caule triplo latiora, basi sinuatim inserta, cuneato-rotunda, plana, appressa.

*Flores feminei* in ramulis brevibus terminales; *folia floralia* caulinis aequimagna apiculata vel obtusa, lobulo triplo brevior, angusto-rectangulari, plano; *amph.* involucre oblongum, foliis suis parum brevius, apice acuminato brevifissum, rima angusta laciniis lanceolatis acutis.

*Androecia* desunt.

*Maurice.* leg. Rodriguez.

13. **Cerato-Lejeunea Renauldii** St. n. sp.

Monoica, rufo-brunnea, in *Radula* repens. *Caulis* vage ramosus. *Folia* imbricata, subrecte patentia, integerrima, plana late ovata, obtusa dorso caulem haud superantia; *cellulae* pellucidae apice 0.017 mm. reliquae 0.017: 0.035 mm. angulis medioque parum incrassatae; lobulus parvus inflatus, oblongus, oblique truncatus, angulo obtuso, saepe ad plicam parvam triangularem reductus. *Amph.* minora, caule 3-plo latiora, remote appressa, cordiformia, subtransverse inserta, ad medium bifida, rima angusta, laciniis obtusis.

*Perianthia* magna, foliis caulinis longiora, medio infero urnaeformia quadrangularis supero in 4 alas abrupte dilatata.



alae ovato-triangulares, rotundatae, lateraliter patulae, superne ad perianthii orificium erostratum angustatae. *Folia floralia* caulinis minora, integerrima, ovata acutiuscula, lobulo triplo minore lanceolato integro; *amph. invol.* foliis suis aequimagnum ovatum ad  $\frac{1}{3}$  obtuse incisum, laciniis obtusis.

*Androecia* parva, bracteis bijugis.

*Bourbon.* leg. Rodriguez.

Pulcherrima planta, perianthio curiosissimo facile cognoscenda.

14. *Lepidozia Stephanii* RENAULD. *n. sp.*

Dioica, rufescens, minor, gracillima, muscis intermixta. *Caulis* filiformis 3-4 cm. longus, remote breviterque pinnatus, ramis longioribus posticis, pinnulae nusquam attenuatae. *Folia* remota, minuta, fere semiamplexicaulia, ad  $\frac{3}{4}$  trifida, lacinae lanceolatae erecto-incurvae aequilongae, *cellulis* uniseriatis (ipsa basi geminatis) constantes. *Amph.* foliis aequalia, segmentis tamen inaequalibus, uno alterove semper majore. *Flores feminei* in ramulis brevibus posticis; *folia involucralia* trijuga, infima squamaeformia, superiora multo majora, intima apice longe ciliata; *perianthia* (juniora solum visa) ore dense longissimeque ciliata.

*Maurice.* leg. Rodriguez.

Proxime accedit ad *Lepidoziam verrucosam* Steph. quae differt foliis verrucosis, perianthii ore brevifisso, foliis floralibus dentatis.

15. *Lophocolea borbonica* ST. *n. sp.*

Dioica, olivacea, depresso-caespitosa, minor. *Caulis* 2 cm. longus, vage multiramosus. *Folia* inferiora minima, patula, cauli aequilata, lunatim emarginata, superiora multo majora, adscendentia, homomalla, ovata, ad  $\frac{1}{3}$  emarginata, lobis acuminatis porrectis. *Cell.* 0.025 mm. trigonis majusculis in margine irregulariter prominentes. *Amph.* patentissima, inferiora libera, superiora uno latere folio coadunata, altero interdum cum lamina angusta in caule longe decurrente folio connata.

*Perianthia* innovata, obovato-triquetra, ad  $\frac{1}{2}$  triloba, lobis apice bifidis grosse tri-quadridentatis; *folia floralia* caulinis similia, majora, perianthio appressa; *amph. invol.* intimum ovatum foliis suis triplo brevius, ad  $\frac{1}{4}$  emarginatum, laciniis acuminatis.

*Androecia* ignota.

*Bourbon.* leg. Rodriguez.

16. *Lophocolea inflata* ST. *n. sp.*

Dioica, dense depresso-caespitosa, rufescens major.



*Caulis* 3-4 cm. longus, pauciramosus. *Folia* dense imbricata, subopposita, subquadrata saepe convexa, marginibus revolutis, margine ventrali parum arcuata, dorsali stricta apice truncata, 3-4 spinosa, spinis longe setaceis strictis divaricatis, dorso libera ventre uno vel utroque latere amphigastrio coalita; cell. 0.035 mm. trigonis majusculis acutis. *Amph.* remota, cauli appressa, apice lunatim emarginata, laciniis divaricatis setaceis, basi utroque latere dente spiniformi munita, in foliis plus minus distincte decurrentia.

*Perianthia* haud innovata, maxima, ovato inflata vix triquetra, haud alata, ad  $\frac{1}{3}$  tripartita, lobis late linearibus apice recte truncatis denseque spinuliferis vel parce fimbriatis. *Folia involucr.* intima vaginatim amplexentia, quadrato-rotunda, apice patula trispinosa uno alterove dente in margine ventrali. *Amph. invol.* intimum caulinis majus, liberum, ovatum ad  $\frac{1}{3}$  bifidum, laciniis lanceolatis porrectis basin versus paucispinosum.

*Androecia* ignota.

*Bourbon.* leg. Rodriguez.

Proxima *Loph. triacanthae* H. & T., quae differt foliis apice distincte angustatis.

17. *Lophocolea longifolia* St. n. sp.

Dioica, inter muscos crescens, pallide-virens. *Caulis* 2-3 cm. longus, in specimine unico solum innovato-ramosus ceterum simplex. *Folia* heteroformia, inferiora contigua minora, plano-disticha, ligulata late breviterque emarginata vel incisa, lobulis inaequalibus obtusis vel rotundatis; superiora remotiuscula sensim majora pro more plus duplo longiora quam lata, fere linearia, breviter lunatim emarginata, lobis acutis margine ventrali recurvo. Cell. 0.025 mm. (basi 0.020:0.035 mm.) trigonis parvis. *Amph.* libera, patula, cauli aequilata basi cuneata, profunde emarginata, laciniis divaricatis, extus unidentatis. *Perianthia* terminalia, semper innovata, turbinata ad  $\frac{2}{3}$  trifida, laciniis apice profunde bifidis, marginibus remote grosseque spinosis, ala nulla; *folia floralia* intima oblonga ad  $\frac{1}{4}$  acute incisa, lobis inaequalibus obtusis; *amph. invol.* intimum obovatum, extus angulatum, ad  $\frac{1}{3}$  obtuse incisum, laciniis longe acuminatis hamatis.

*Androecia* ignota.

*Bourbon.* leg. Rodriguez.

18. *Lophocolea rubescens* St. n. sp.

Monoica, major, flavo-virens, apicibus rubescentibus. *Caulis* 3-4 cm. longus, multiramosus, repens, inter muscos adscendens vel dense caespitosus. *Folia* apposita, plano-



disticha, dense imbricata, ovato-triangularia, margine ventrali parum arcuata, dorsali substricta, apice triplo angustiora, lunatim-emarginata, laciniis inaequalibus acutis, basi dorsali libera ventre amphigastrio connata. *Cell.* marg. 0.025 mm. reliquae 0.045 mm. trigonis nullis. *Amph.* magna, caule subtriplo latiora, ad  $\frac{2}{3}$  emarginata, laciniis lanceolatis acutis, extus breviter unidentatis utroque latere foliis late connatis. *Perianthia* haud innovata, obconico-triquetra, apice ad  $\frac{1}{4}$  trifida, segmentis profunde emarginato-bifidis, late alata, alis longe decurrentibus irregulariter grosse spinosis; *folia floralia* erecta oblongo-linearia, apice emarginato-bidentata, marginibus paucidentatis.

*Amph. invol.* intimum subquadratum concavum, emarginato-bidentatum, foliis suis late connatum, marginibus paucidentatis, recurvis.

*Androecia* in ramulis lateralibus terminalia, bracteis 5 jugis, antice inflato-lobatis decurvis, apice emarginato-bifidis ventre amphigastrio magno quadrifido coalitis.

*Bourbon.* leg. Rodriguez.

19. **Odontoschisma ligulatum** ST. *n. sp.*

Sterilis, glaucescens laxe caespitosum in cortice putrido reptans. *Caulis* basi pauciramosus, ramis posticis longioribus arcuatis, simplicibus, iteratim radicanibus. *Folia* parum imbricata, fere recte patentia, adscendentia, plana, ligulata, antice longe decurrentia, postice breviter inserta. *Cellulae* pellucidae, margine 0.025, medio 0.035, basi 0.025 : 0.050 mm. trigonis distinctis cuticula verrucosa. *Amph.* ubique praesentia caule aequilata, triangularia, valde recurva apice bifidula. *Cetera* desunt.

*Bourbon.* leg. Rodriguez.

20. **Plagiochila Cambuena** ST. *n. sp.*

Dioica, fuscescens, minor, rigida, gracilis laxe caespitans. *Caulis* e caudice repente defoliato erectus, strictus, sanguineus simplex vel bifurcatus apice remote pinnatus pinnulis fere recte patentibus strictis. *Folia* decurvo-homomalla dense imbricata valde concava, in plano fere rotunda, antice longe decurrentia, postice valde ampliata, cristato-erecta margineque maxime crispata, ceterum integerrima, margine dorsali anguste recurvo. *Cell.* apicales 0.025, basi 0.025 : 0.035 mm. trigonis magnis acutis. *Amph.* maxima, e basi cuneata late obovata, ad  $\frac{3}{4}$  bifida, laciniis irregulariter lobatis crispatis. *Perianthia* compresso-campanulata, ore truncato dense setosa, uno latere alata, ala lata inermi, *folia involucralia*



argute dentata, ut amphigastrium involucre caulinis similis, majora. *Androecia* ignota.

*Madagascar* leg. Camboué.

21. ***Plagiochila Rodriguezii* St. n. sp.**

Dioica, olivacea, dense caespitosa, major. *Caulis* erectus, simplex, apice flabellatim pauciramosus, in plantis floriferis repetito furcatus. *Folia* dense imbricata, oblique patentia (angulo  $45^\circ$ ) oblique ovato-oblonga, integra, antice parum decurrentia margine stricto recurvo, postice decurrentia ampliata, margine basin versus recurvo crispatulo, apicem versus plano, apice angustato rotundata vel subtruncata. *Cell.* apic. 0.017 mm. basi duplo longiores, trigonis majusculis. *Flores feminei* axillares i. e. terminales utroque latere innovati; folia floralia bijuga, caulinis similia majora remote spinosa. *Cetera* ignota.

*Bourbon.* leg. Rodriguez.

22. ***Plagiochila tenax* St. n. sp.**

Dioica, fusco-olivacea, laxe caespitosa, tenax robusta. *Caulis* basi pauciramosus, ramis erectis simplicibus. *Folia* dissita, fere recte patentia, rigida, inferiora semiovata, superiora oblongo-lineararia, leniter falcata utroque latere parum decurrentia, margine dorsali anguste recurvo, postici magis arcuata basique recurvata, apicem versus et apice ipso paucidentata, dentibus irregularibus, vel medio majore (folium acutum) vel reliquis aequimagno (folium truncatum). *Cell.* apice 0.025 : 0.025 mm., medio 0.035 : 0.040 mm. incrassatione stellari, basi 0.025 : 0.060 mm. incrassatione maxime nodulosa.

*Perianthia* magna, depresso-pyriformia exalata, ore dense grossequo spinoso; *folia floralia* ovato-oblonga, margine ventrali apiceque remote dentato-spinosa.

*Androecia* terminalia, lineararia, bracteis sexjugis, e basi julaceo-imbricata recurvis apice truncato-paucispinosis.

*Bourbon.* leg. Rodriguez.

23. ***Schistocheila borbonica* St. n. sp.**

Dioica, robusta, olivacea, dense depresso-caespitosa. *Caulis* parum ramosus, duriusculus, radicellis atro-purpureis arcte repens. *Folia* contigua, oblique a caule patentia, ligulata, decurvula, apice paucidentata vel medio dente longiore apiculata, ceterum integerrima, margine ventrali recurvo; *lobuli dorsales* dense imbricati, obovati, insertione vel basi sua margini postico folii approximati, apice oblique truncati, angulo spina singula armato. *Amph.* caulina nulla. *Perianthia* 3 mm. longa, cylindrica, pariete crassa (8 cell. in



medio infero) basi foliis intimis et amphigastrio breviter connata, apice multilaciniata, laciniis grosse dentatis ciliatisque, convexo-conniventibus; *folia floralia* trijuga caulinis similia, margine tamen ut etiam lobulus foliigenus argute spinoso-dentata; *amphigastria floralia* quinque, infimum squamiforme, reliqua sensim majora magisque laciniata, superum usque ad basin fere quadrilaciniatum, laciniis linearibus apiceque bifidulis vel dentatis.

*Bourbon.* leg. Rodriguez.

*Schistocheila Neesii*, cui simillima, differt foliis multo longioribus angustioribusque, involucro valde diverso.

Sine dubio *Schistocheilis* perianthium verum (ut in omnibus hepaticis ubi adest ex foliis et amphigastrio conflatum), adjudicandum est; calyptra cum perianthio alte concreta (et apice pistillis sterilibus coronata); *perianthii basis* ergo valde carnosa est; haec est "fundus" caulis autorum in Syn. Hepat. pag. 13.

24. *Schistocheila piligera* St. n. sp.

Sterilis. Laete viridis, depresso caespitosa, flaccida, fragilissima. *Caulis* radiculis purpureis arctissime repens, simplex. *Folia* oblique a caule patentia, contigua, tenerrima oblonga, vel oblongo-lanceolata, margine (postico recurvato) ciliis remotiusculis setaceis ubique armato; *lobulus dorsalis* fere in axi folii accretus, folio duplo brevior, medio supero liber, semiovatus acutus margine longissime ciliatus; *cellulae* pellucidae apice 0.025 mm., medio 0.035 mm., ipsa basi parum longiores, incrassatio angulosa nodosa. *Amph.* caule angustiora valde irregularia—vel ligulata pauciciliata, vel minora plus minus profunde bifida laciniis in spinas longas attenuatis.

Quoad ciliis cum *Sch. ciliata* et *cristata* solum comparanda, ceterum toto coelo diversa.

*Madagascar.* leg. Camboué.

*Leipzig, Germany, July, 1890.*

EXPLICATIO TABULARUM XVII—XIX.

Figg. xii et xvii, a, X10; fig. xvii, b, X2; reliq. X30.

Fig. I. *Chiloscyphus grandistipus* St. Pars caulis a ventre visa.

Fig. II. *Taxi-Lejeunea conformis* N. & M. a. pars caulis a ventre visa.  
b. perianthium.

Fig. III. *Eu-Lejeunea ecarinata* St. Pars caulis c. per. a ventre visa.

Fig. IV. *Cheilo-Lejeunea Kurzii* St. Pars caulis c. per. et androecio.

Fig. V. *Cerato-Lejeunea mascarena* St. a. pars caulis a ventre visa.  
b. perianthium. c. involucrium.



Fig. VI. *Cerato-Lejeunea mauritiana* St. a. pars caulis a ventre visa. b. Perianthium.

Fig. VII. *Lopho-Lejeunea multilacera* St. Pars caulis c. per a ventre visa.

Fig. VIII. *Acro-Lejeunea parviloba* St. a. pars caulis a ventre visa. b. Folia involucr. c. amph.

Fig. IX. *Cerato-Lejeunea Renauldii* St. a. pars caulis a ventre visa. b. perianthium.

Fig. X. *Lophocolea borbonica* St. a. pars caulis a ventre visa. b. perianthium. c. folium invol. d. amph. invol.

Fig. XI. *Lophocolea inflata* St. Pars caulis a ventre visa.

Fig. XII. *Lophocolea longifolia* St. a. pars caulis c. flore fem. b. perianthium. c. Folia invol. d. Amph. invol.

Fig. XIII. *Lophocolea rubescens* St. a. pars caulis a ventre visa. b. perianthium. c. Folia et amph. invol.

Fig. XIV. *Plagiochila Cambuena* St. a. folium caulinum. b. Amphigastrium.

Fig. XV. *Plagiochila Rodriguezii* St. Pars caulis a ventre visa.

Fig. XVI. *Plagiochila tenax* St. a. pars caulis a ventre visa. b. perianthium junius. c. folium florale.

Fig. XVII. *Schistocheila borbonica* St. a. Folium caulinum. b. apex plantae c. per.

Fig. XVIII. *Schistocheila piligera* St. Folium caulinum.

## Celloidin imbedding in plant histology.

A. C. EYCLESHYMER.

Celloidin<sup>1</sup> imbedding is being used quite extensively in animal histology and offers many advantages over paraffine. It is with the view of introducing the methods into plant histology that I write the following, for which I claim but little originality.

Those who have imbedded delicate vegetable tissues, by methods requiring heat, are well aware of the extreme care necessary to avoid contraction. This is entirely avoided by the use of celloidin; moreover, alcoholic material may be imbedded directly.

To obtain the best results a celloidin free from all trace of foreign matter should be used. An excellent article is manufactured by the Chemische Fabrik auf Actien (E. Schering), Berlin. It may be obtained through the Ed. Supply Co.,<sup>6</sup> Hamilton Place, Boston, or Bachrach & Brothers, Balti-

<sup>1</sup> Duval (Jour. de Microg., p. 226, 1888) states that celloidin has no advantages over colodion.